

Firm strategic control

Direct ownership, indirect ownership, dispersion, and board of directors

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Leadership and Governance: Agency, Board of Directors, Shareholders

Firm Strategic Control: Direct Ownership, Indirect Ownership, Dispersion, and Board
of Directors

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Firm Strategic Control: Direct Ownership, Indirect Ownership, Dispersion, and Board of Directors

Abstract:

Our empirical study of 246 Directors, financial executives, accountants and credit/security analysts explore the concept of firm strategic control and what theoretically developed attributes contribute to an entity having strategic control over another. Our results suggest that strategic control is established with 100 per cent ownership but where there is less than 60-64% ownership then other strategic control attributes are necessary. Our results delve into what combinations of Direct ownership, indirect ownership, dispersion and Board of Director representation are required for strategic control.

Introduction:

Strategic management researchers focusing on corporate governance often utilize Agency theory as a foundation (ex. Reuer and Ragozzino, 2006; Yin and Zajac, 2004; Douma, George and Kabir, 2006). Theoretically the governance structure is such that the Board of Directors represents the owners (stockholders) and aligns the interests of the top management team with that of the owners (Johnson, Hoskisson and Hitt, 1993). The in-depth research describes the characteristics of the Board of Directors i.e. internal, external, demographics, number, experience, etc., stockholders i.e. active, passive, institutional holders, large versus small holders, etc. and the top management team (TMT) i.e. stewardship, agent, self-interest, demographics, tenure, etc. i.e. Golden and Zajac, 2001; Amihud and Lev, 1981. However, very little research specifically combines all three aspects to determine strategic control of a firm and what factors contribute to the controlling of the strategic direction of a firm. We theoretically develop a model from Agency Theory to determine which attributes account for strategic control. We describe strategic control as one entity that has the capacity to control the operating and financial management policies of another entity, irrespective of whether there is a majority ownership interest.

Background:

From both a theoretical perspective and from a practitioner perspective strategic control is of import as the spate of global investment continues unabatedly with firms attempting to acquire strategic control. For the year ended 2007, \$4.5 trillion was spent in 42,364 acquisitions resulting in total strategic control of the acquired firm (Karnitshnig, 2008). However, the global activity is not only pure acquisitions, but global investors are acquiring portions/percentages of firms that are publicly traded giving rise to strategic management researchers questioning as to what percentage or circumstances give rise to the investors' ability to strategically control. Two recent high profile examples are Chinalco and Alcoa Inc's combined \$14.05 billion investment in Rio Tinto PLC which accounts for a 9% interest (Wall Street Journal, 2008) and China Investment Corporation's (CIC) \$5 billion investment in Morgan Stanley in December. From just the CIC's perspective alone, they anticipate continued investments in a portfolio of firms utilizing their \$200 billion in assets (Davis, 2008).

This investment activity places continued pressures upon strategy scholars to investigate the outcomes of share acquisition by new funds/firms and the affect this has on who has strategic control and governance. For example, the blocked attempt to buy into the US oil company Unocal by a Chinese firm occurred due to the perceived amount of strategic control over Unocal's management and strategy. Yet literature suggests that acquiring shares does not guarantee strategic control over a firm as other variables also need to be taken into consideration: indirect strategic control (from other subsidiaries or other firms which the investor has an interest) (Bethel, 2007), representation on the Board of Directors (Johnson, Hoskisson, and Hitt, 1993; Jensen

and Meckling, 1976), dispersion of ownership (Mahrt-Smith, 2005), and block ownership (percentage owned) (Thomsen and Pedersen, 2000).

Our research empirically investigates who controls the strategic actions of a firm. In essence, what combination of attributes gives one entity "strategic control" over the decision making of another entity? The model will assist strategic management practitioners to assess the extent of strategic control in inter-entity relationships. A number of other professional applications of the model are possible. The attributes identified in the model could also form the basis on ways to achieve strategic control without the costs of majority equity investment. Attributes of strategic control, other than ownership, may produce much more cost effective devices for establishing and maintaining strategic control of another entity. The model will help identify possible trade-offs in structuring inter-entity links. Conversely the model could be useful in identifying takeover defence strategies.

Our empirical study of 246 Directors, financial executives, accountants and credit/security analysts explore the concept of firm strategic control and what theoretically developed attributes contribute to an entity having strategic control over another. The variables identified in the literature are: total level of ownership, direct versus indirect ownership, dispersion of ownership of other stock, and representation on the Board of Directors. Our results suggest that strategic control is established with 100 per cent ownership but where there is less than 60-64% ownership then other strategic control attributes are necessary. Our results delve into what combinations of direct ownership, indirect ownership, dispersion and Board of Director representation are required for strategic control.

Literature:

Corporate governance represents the relationship among stakeholders that determines and controls the strategic direction and performance of an organization (Hillman, Keim, and Luce, 2001). The research that explores corporate governance mostly utilizes agency theory to explore the linkages and influence between the stockholders (Owners) to board-of-directors (Board) to the top management team (TMT) to the performance of the firm. Corporate governance refers to the integrated set of internal and external controls that affect the manager-shareholder (agency) conflicts of interest resulting from the separation of ownership and control (Berle and Means, 1968; Williamson, 1984).

Unfortunately, the results of these research efforts have been mixed and appear to not fully explain the governance relationship through use of agency theory (Johnson, Daily and Ellstrand, 1996) and hopefully our research will strengthen agency theory's explanatory power. Resource dependence theory has also been sparsely used to suggest that the role of the Board is a means for facilitating the acquisition of resources critical to the firm's success (Pfeffer and Salancik, 1978). However, this theory also has met with mixed research results and may not fully explain the phenomena and importance of governance and performance (Dalton, Daily, Ellstrand and Johnson, 1998).

Agency theory is built on the managerialist notion that separation of ownership and control potentially leads to self-interested actions by those in control (Jensen and Meckling, 1976; Eisenhardt, 1989). As firm owners are largely removed from the operational aspects of the firm, managers are believed to gain an advantage over firm owners due to their firm-specific knowledge as well as being 'in charge' (Mizruchi, 1988). This managerial strategic control in-turn is theorized to allow the managers to pursue actions that benefit themselves rather than those of the owners.

These actions create a conflict of interests between the managers and the owners which necessitates monitoring mechanisms designed to protect shareholders as owners of the firm (Fama and Jensen, 1983; Williamson, 1985).

Broadly, two control cycles as corporate processes are suggested. In particular, the role of control places four forces operating on the corporation: 1) capital markets, 2) legal/political/regulatory systems, 3) product and factor markets, and 4) internal control systems (Jensen, 1993). The external control cycle reflects the market for corporate control (Walsh and Seward, 1990). The capital markets were initially quite constrained up until the 1970's but appear to be more effective in today's market (Pound, 1993). Product and factor markets are slow to act as a control force, but inevitably can decide the corporation's fate. The internal control cycle captures the activities of a firm as its board-of-directors attempt to monitor and control the activities of its top managers. The internal control mechanisms of the corporation operate through the board-of-directors and play an important role in disciplining incumbent management (Fama, 1980; Fama and Jensen, 1983).

Complementary interventions of both internal and external control mechanisms maintain and are seen as inhibiting managerial performance in regard to agency problems mentioned earlier (Franks and Mayer, 1996). Research has suggested that some of these mechanisms include: 1) monitoring and exerting and influence on control through the team of executives and non-executive directors on the board (Coughlin and Schmidt, 1985; Weisbach, 1988), 2) the managerial labor market (Fama, 1980), 3) product market competition (Hart, 1984), and 4) the market for corporate control (Jensen, 1988). As the board has the legal authority to hire, fire, and compensate top management, to safeguard invested capital, they are an integral part of corporate governance (Williamson, 1984).

In an attempt to minimize self-interest by managers and maximize returns to the owners (stockholders), control measures are established (Eisenhardt, 1989). Agency theory suggests that managers, by virtue of their firm-specific knowledge and managerial expertise, are believed to gain an advantage over firm owners who are largely removed from the operational aspects of the firm (Mizruchi, 1988). The greater the control managers obtain over the firm, the greater the opportunity for managers to take actions that would benefit them. Therefore monitoring mechanisms must be installed to protect the shareholders of the firm (Fama and Jensen, 1983). One of the primary objectives of the board is to serve as this monitoring function (Fleischer, Hazard, and Klipper, 1988).

Hypothesis:

Consequently the first and most important part of the research is the description of strategic control. Strategic control was modeled as a continuous multi-attribute concept for which there exists a unique boundary, θ_c , between the regions of dominant strategic control and significant influence (see Figure 1). As noted the relevant governance literatures identified the level of ownership, level of direct versus indirect ownership, dispersion of non-owned equity, and common board membership, as the four key attributes of dominant strategic control.

Exactly which of these attributes, if any, is significant in the model, and the question as to relative importance of each attribute, are both empirical issues that we investigate. Further empirical issues include the degree to which the attributes are complementary or substitutes. Figure 1 depicts strategic control as a continuous concept anchored at the points of no strategic control and absolute strategic control. At one extreme absolute strategic control represents the unbounded ability to make decisions. This means that no other party (singularly or combined) can determine the

business decisions of the strategic controlled entity. Absolute strategic control implies an extremely high level of involvement in the entity, with the upper bound being total strategic control (through ownership or other arrangements) of all decision making within the entity. This level of strategic control is not, however, the norm. Other parties, such as government, will always have a non-zero influence on the decisions of any business.

At the other end of the continuum in Figure 1 is the point of no strategic control. This is where the level of involvement by the investor company is such that it has no influence over the business decisions of the investee. Between the points of no strategic control and absolute strategic control are three broad categories of partial or shared strategic control: insignificant influence, significant influence, and dominant strategic control. Figure 1 shows these decision points as θ_s and θ_c .

The boundary between the first two categories of strategic control, θ_s , is the point where the investor's degree of influence moves from insignificant to significant strategic influence over either, or both, the operating and financing policies of the investee. The boundary between the second and third categories of strategic control, θ_c , is the point where the investor moves from significant influence to dominant strategic control over the strategic decisions of the investee. Dominant strategic control is the ability to make decisions within the constraints imposed by the attributes of the relationship between the parties. This implies a level of interest (equity and/or decision making representation) that would, as a minimum, allow strategic control of decisions and operations under 'normal' circumstances (Lee *et al*, 1976; Leo, 1987). For example, holding more than 50 per cent of the voting power of a company would afford an entity *de jure* strategic control over the passage of ordinary resolutions in a general meeting. Corporate legislation in most jurisdictions

requires a higher majority for special motions, namely 75 per cent, but this does not necessarily represent absolute strategic control. As long as an entity controls less than 100 per cent of the voting rights it will have to contend with the interests of minority holders. Corporate law affords special protection to minority interests and regulatory bodies have shown a willingness to ensure adequate protection for those interests. As a result the ability to achieve absolute strategic control is limited.

This section models the general attribute structure of strategic control relationships. From this general framework situation specific attributes are explored. The discussion culminates in the following four attribute linear additive model of dominant strategic control:

$$C_i = \sum_{j=0}^4 \beta_j X_{ij} + u_i \quad (0.1)$$

Where:

- C_i = Degree of strategic control over related entity i ;
- X_{i0} = Unit vector to capture fixed effect over all i entity relationships;
- X_{i1} = Total level of ownership in entity i ;
- X_{i2} = Direct versus indirect ownership in entity i ;
- X_{i3} = Dispersion of ownership of other stock in entity i ;
- X_{i4} = Representation on entity i 's Board of Directors; and
- u_i = Non-systematic attributes of relationship i .

The development of the model is based on the assumption that the concept of strategic control lies on a continuum as depicted in Figure 1. Multiple attributes are assumed to manifest in each strategic control situation. Different combinations and levels of these attributes represent different points along the strategic control continuum. This multi-attribute strategic control continuum is represented as follows:

$$C_i = f(X_{i0}, X_{i1}, X_{i2}, X_{i3}, \dots, X_{in}) + u_i \quad (0.2)$$

C_i is a continuous variable, bounded by the points of no and absolute strategic control, and represents the degree of strategic control an entity has over its i th related entity. The model depicts the degree of strategic control for the i th entity relationship as a function of $n+1$ attributes (X_{ij} , $j = 0, 1, 2, 3 \dots, n$; where X_{i0} = unit vector for common fixed effects), with u_i added to capture non-systematic attributes that distinguish strategic control relationship i from the relationship k ($i \neq k$).

To operationalize the model, it is assumed that strategic control is a linear additive function that maps a multi-dimensional attribute set to a uni-dimensional overall strategic control vector. This assumption seems reasonable given the vast body of research in psychology that has found simple linear models more closely approximate human judgments than complex lexicographic, satisficing or multiplicative choice models (see for example Goldberg, 1968; Hoffman, Slovic and Rorer, 1969; Dawes, 1971; Dawes and Corrigan, 1974; Berl, Lewis and Morrison, 1976, and Barron, 1977). To maintain generality the mapping function depicted in equation 0.3 is constrained to be linear in the parameters, but not the attributes:

$$f(X_{ij}) = \sum_{j=0}^n \beta_j g(X_{ij}) \quad (0.3)$$

This research focuses exclusively on modeling dominant strategic control and the boundary θ_c , which has proved economically significant. Nevertheless the general model developed in this section captures all the levels of strategic control. Additional theoretical and empirical research is required on the nature of θ_s and much of the methods' details have been cut for research parsimony. With the general model in place, the next section explores the nature of the attributes (the X_{ij}) that give rise to strategic control situations. In particular, the model captures the attributes that characterize dominant strategic control situations.

Majority Ownership:

Majority ownership may not be necessary or in fact sufficient for dominant strategic control. Strategic control is determined by the facts of the situation that may or may not equate with the attributes that lead to strategic control. The level of

beneficial interest, through both direct and indirect ownership, is but one attribute that can influence the degree of strategic control. Research suggests that ownership of shares does not necessarily extrapolate into voting power (Becht, 1999). However, large block shareholders hold power over the strategic actions of firms as they: tended to increase restructuring (Bethel and Liebeskind, 1993), are negatively related to product diversification (Hoskisson et al, 1994), and is positively associated with sales of unrelated businesses (Bergh, 1995). Ownership structure affects the strategic direction such as profit and growth objectives (Thomsen and Pedersen, 2000).

The strategic management, finance and economic literatures on the markets for corporate control suggest that majority ownership is a sufficient criterion in the context of a takeover for one entity to strategic control another (Copeland and Weston, 1988). Anti-takeover counter measures adopted by the management of target firms evidences further the import of stock ownership. Greenmail (share buybacks), supermajority and standstill clauses, as well as anticipatory changes to the ownership structure all represent takeover defenses that focus on the percentage owned (DeAngelo and Rice, 1983; Linn and McConnell, 1983; Dann and DeAngelo, 1985).

Therefore, the total percentage of shares owned is an important attribute in determining if a parent company does or does not strategic control related entity i . However, 50 per cent ownership is not a necessary condition for dominant strategic control as other attributes may contribute to the strength of the strategic control relationship. If the total percentage ownership, X_{ij} , $j = 1$, is a significant attribute in the strategic control model then:

H1: *There is a direct proportional relationship between the level of ownership and the degree of strategic control over related entity i .*

Level of Direct vs. Indirect Ownership

As illustrated by the Enron case and the meltdown of the current hybrid mortgage investments, the indirect ownership and associations are now the global norm in investments. Associated with majority ownership is the issue of complexity of that ownership holding. The composition of the ownership link is recognized as a

key attribute in assessing the degree of strategic control. Such corporate regulations use the term beneficial interest to mean all interests, direct or indirect, from which one entity can obtain benefit (for example the Australian Corporations Act 1989; UK Companies Act 1989, New Zealand Companies Act 1981). IAS 27, SSAP 8 (NZ), SSAP 14 (UK), and AASB 1024 (Australia) all define an 'ownership interest' to be capital held either directly, or indirectly through another entity. The significance of direct and indirect links stems from the degree of strategic control the link implies. Problems arise for assessing strategic control when multiple indirect links are created.

Thirty per cent of the US direct investment abroad in 2006 were classified as foreign affiliates highlighting the importance of the upward trend of indirect ownership in which US parents' own foreign affiliates who then own other foreign affiliates (Survey of Current Business, 2007). As technology has created new conduits for stocks and securities sales, ownership (both direct and indirect) has never been more widely distributed (Bethel, 2007)

In summary, strategic control assessments are more problematic where ownership is indirect through intervening structures. Strategic management must consider whether the complexity of the indirect links lessens the capacity to strategic control. If the directness of the inter-entity ownership, X_{ij} , $j = 2$, is a significant attribute in the strategic control model then:

H2: There is a direct proportional relationship between the level of direct versus indirect ownership and the degree of strategic control over related entity i.

Dispersion of Ownership of Other Stock

Williamson (1963) identifies dispersion of ownership as a key determinant of managements' ability to make discretionary decisions in an agency environment. Dispersion refers to the level of concentration in ownership held by parties other than by the potentially dominant entity. In a strategic control framework a broad view of

dispersion would define entity *i* as widely held if there is a low probability that other stockholders will act in concert against the dominant entity. This includes actions at annual general meetings, directors' meetings, or in the courts. Alternatively, entity *i* is closely held where a third party holds a significant block of *i*'s stock, thus making it more likely that the dominant entity has to consider the wishes of the third party.

There has been much research in regard to Agency theory and dispersion of stock ownership. For example, dispersion of ownership leads to weaker monitoring due to both higher coordination costs and increased information asymmetry (Tosi and Gomez-Mejia, 1994) as well as hampers the ability and motivation to monitor the firm (Khan Dharwadkar and Brandes, 2004). Dispersed owners are weak as they lack information as large investors gather information and offer alternatives to management strategic proposals (Mahrt-Smith, 2005). Ownership dispersion provides managers with the ability to extract benefits for themselves such as higher compensation as shareholders are unable to remove them (Elston and Goldberg, 2003).

Evidence from the UK suggests that disperse ownership ensures that only in extreme situations does the strategic control of large public companies come under pressure from interest groups (Tricker, 1984). There are, however, large block shareholders in many organizations that can restrict the largest shareholder's ability to dominate management. For example, a third party who holds a large equity block may disrupt the power of a dominant entity through proxy contests and court action. Proxy contests and stockholder suits, however, are not common events and empirical evidence suggests that block holders do not always initiate or lead proxy contests (Dodd and Warner, 1983). Although these suits are usually over breaches of fiduciary duty (Kesner, Victor and Lamont, 1986; Jones, 1986; Kesner and Johnson, 1990),

they essentially serve to define the boundary between dominant strategic control and absolute strategic control.

The strategic management, economics and finance literatures suggest that dispersion plays a major role in the operation and regulation of equity markets. Dispersion impacts on the market for takeovers, especially where holdings of significant fractions of equity are evident or there is competition for 'large blocks' of shares (Fama and Jensen, 1983; Williamson, 1983; Dann and DeAngelo, 1983). What constitutes a 'significant fraction' or a 'large block' will depend on the facts of the case. Insider trading legislation, takeover regulations, and evidence from capital market research, suggests a holding of 5-10 per cent is sufficiently large to constitute a 'significant fraction' or a 'large block'. Alternatively, a significantly large holding relative to the size of the dominant entity's holding (say about half the size) would prima facie give another party a significant voice in any court or general meeting challenge.

In summary, the role of dispersion in equity markets suggests ownership dispersion is an important attribute in assessing strategic control relationships. It indicates the possibility of other interests competing for strategic control, which at the extreme could make dominant strategic control impossible. If dispersion of ownership of other stock, X_{ij} , $j=3$, is a significant attribute in the strategic control model then:

H3: *There is a direct proportional relationship between the level of dispersion of ownership of other stock and the degree of strategic control over related entity i.*

Representation on Board of Directors

There has been varying research on how and when boards will influence strategy. Early research suggested that boards were powerless and were tools of top management (Pfeffer, 1972) but increasingly research suggests that boards take an

active role in the strategic direction of the firm (Finkelstein and Hambrick, 1996). The influence of boards and strategic control are such that when boards are inclined towards strategic change, subsequent improvements in performance are indicated (Golden and Zajac, 2001).

Outside board membership is expected to be more closely aligned with stockholder's interests and are more likely to become involved in major strategic decisions (Johnson, Hoskisson and Hitt, 1993) and as such dismissal of the CEO becomes more likely with poor performance (Weisbach, 1988). The percentage of board members is a key determinant of whether one company can achieve dominant strategic control over another company as the decision making power in the modern corporation lies with the Board of Directors (Tricker, 1984). The organizational literature defines the degree to which there is common strategic control of two corporate boards to be proportional to the sum of the directorship overlaps or interlocks between the corporations (Mariolis and Jones, 1982). The creation of common or interlocking board representation may, however, be to achieve a range of organizational goals. These include co-opting resources as a means of establishing dominant strategic control.

The strategic management literature suggests director interlocks can be a device to co-opt resources, information flows, or to coordinate activities, where legal, financial or other constraints make strategic control through outright acquisition impossible (Pfeffer, 1972; Dooley, 1969; Burt, 1980; Palmer, 1983; Stearns and Mizruchi, 1986; Mizruchi and Stearns, 1988). The use of common or interlocking directorships, in conjunction with other boundary spanning devices, such as ownership, allow an entity to achieve dominant strategic control over the operating and financing policies of other entities (Palmer, 1983; Zajac, 1988).

Empirical research on interlocking board membership has not controlled for the confounding effects of ownership level and therefore can not distinguish between co-operation and dominant strategic control motivations for the link. The evidence does suggest reconstitution of a broken interlocking directorship is more likely if there are

multiple ties, where the receiving firm is profitable, or when the sending firm has borrower-lender financial 'power' over the receiving firm (e.g. Palmer, 1983; Stearns and Mizruchi, 1986; Richardson, 1987). Burt (1980) provides more definitive evidence as he considers a broader spectrum of inter-entity ties, including the level of ownership. He finds that ownership and common board membership (direct and indirect) are complementary strategic control relations.

The strength of any inter-corporate relationship, such as strategic control associated with majority ownership, is diluted if not associated with representation on the Board of Directors. Conversely, for board membership to confer capacity to strategic control generally requires some non-zero ownership interest as well. Dominant strategic control is likely to rest with the party that has the majority board representation and sufficient ownership interest to establish and maintain that majority position.

In summary, a 'strategically controlled' Board of Directors is one where a significant or majority percentage of the board are not independent or are under the influence of another entity. A person on i 's Board of Directors is a representative of another entity, firstly if that entity has the power to appoint or remove the member from i 's board. Secondly, if it is reasonable to assume that a board member's voting pattern is under the influence of another entity, or an associate of another entity, then that director is a representative of that other entity. All other directors are considered independent of the strategic controlling entity. If the level of board membership, X_{ij} , $j = 4$, is a significant attribute in the strategic control model then:

H4: There is a direct proportional relationship between the level of common board membership and the degree of strategic control over related entity i .

Methodology

Sample

A random sample of 1000 directors, financial executives, public accountants and credit/security analysts was selected from the US and Australian populations of

potential subjects. Separate sampling frames were identified for the US and Australia. Two main sources of potential US subject were employed. The first was a database from the University of Southern California of over 6000 corporate executives, directors and public accountants located around the US. A second database was employed to identify credit and security analysts based in California. A random sample of 500 potential subjects was identified from these two databases. The sample was stratified one third credit and security analysts, and two thirds corporate executives, directors and public accountants so as to focus more on the US in general.

The Australian *Business Who's Who* was used to identify corporate executives and directors for the 1000 largest Australian companies. The sampling frame for public accountants was Bond University's School of Business executive database. An outside agency (which must remain confidential) provided a listing for credit and security analysts. Again a random sample of 500 potential subjects was identified from these three databases which were stratified one third credit and security analysts, and two thirds corporate executives, directors and public accountants.

The range of subject groups is considered representative of the major users of financial statements. Directors, financial executives, accountants and credit/security analysts have to deal with the issue of 'strategic control' frequently and thus are considered appropriate judges of whether one company strategic controls another. No specific group of shareholders is included, although some of the subjects may also fall into this category.

The treatment booklet was mailed to potential participants in the US and Australia. Completed test instruments were returned in the supplied self-addressed reply-paid envelope. The response statistics for the mailed survey are summarized in Table 1. Some of the mailed surveys were returned marked indicating participation

"Declined" or "Return to Sender" (i.e. respondent not prepared to participate or undeliverable due to database decay factors such as location or personal changes). From the remaining 611 surveys mailed but not returned unopened, a total of 246 usable responses were received (i.e. 40.3 per cent of the possible responses). Techniques to enhance response rates, such as follow up mailing procedures, were not possible due to the anonymous response format and the restricted access to databases.

Table 1: Survey Response Statistics

<i>Survey Item</i>	Australia	USA	Total
Random Sample Mailed Survey	500	500	1000
Less: Returned "Return to Sender"	161	145	306
Less: Returned "Declined"	42	41	83
<i>Total Possible Responses</i>	297	314	611
Completed Responses	141	117	258
Less: Unusable Responses	5	7	12
<i>Total Usable Responses</i>	136	110	246
<i>% Usable vs. Possible Responses</i>	45.8%	35.1%	40.3%

The usable responses were coded into a spreadsheet by an independent coder with no knowledge of the hypotheses being tested. The coded data were independently checked against the hand-written responses. Data coding and entry errors were corrected prior to commencing the planned data analysis.

Empirical Measures

Empirical measures for the variables in the model draw on the theoretical discussion and case evidence on the nature of the variables. The measure for the dependent variable, degree of strategic control, is discussed first followed by the levels used to represent the independent variables, the four attributes of strategic control.

Dependent Variable - Degree of Strategic control: The dependent variable cannot be defined as the actual strategic control decisions of companies as in practice this measure is confounded by the objectives of management. To overcome this problem the subjective evaluations of subjects are captured in the context of an experiment

where other motivating factors can be held constant. The conjoint experiment achieves this objective by presenting different combinations of the strategic control variables with all other extraneous variables held constant. A mixture of measures, similar to Rosenberg's (1956) category assignment and rating task, is used to capture the decisions of the subjects. First, the practitioner's subjects make a dichotomous strategic controlled-not strategic controlled decision. High task familiarity, associated with the correspondence between the experimental task and the parameters for the subject's real word decisions, is likely to result in more reliable strategic control decisions.

A second measure of the dependent variable requires the subjects to rate the degree of confidence they have in their decisions. Decision confidence is measured on a 5-point Likert-type scale with anchor points at "Not Too Confident" and "Extremely Confident". This measure allows subjects to indicate the strategic control decisions that they feel represent 'grey' or uncertain cases. An 'index' of possible states of dominant strategic control is then formulated by taking the product of the strategic control evaluations (i.e. strategic controlled-not strategic controlled) and the confidence rating on a 5-point scale. This multinomial strategic control 'index' simultaneously reflects the practitioner's dichotomous operationalization of the concept, and approximates the continuous strategic control concept depicted in Figure 0.1.

Independent Variables - Levels of Strategic control Attributes: The independent variables were manipulated through a series of cases. Each case contained varying levels of the independent variables. Table 2 below summarizes the levels for each of the attributes.

Table 2: Independent Variables - Levels for Strategic control Attributes

Independent Variable	Levels for Strategic control Attribute
Total Percentage Ownership (X_{i1})	15%, 30%, 45%, 49%, 51%, and 65%
Fraction of Ownership Direct (X_{i2})	0%, 40%, 60%, and 100% ^a
Dispersion of Other Ownership (X_{i3})	"Widely Held", 10%, 20%, and 30%
Level of Membership on 10 Member Board (X_{i4})	2, 4, 6, and 8 members

^a The % Indirect = 100% – % Direct

The choice of levels for each attribute was influenced by:

1. the legislation and standards regulating reporting practices;
2. case evidence of the attributes influencing strategic control;
3. research evidence on the number and spacing of attribute levels; and
4. practical issues of subject fatigue and interest in the case.

The levels for the percentage ownership attribute are 15, 30, 45, 49, 51 and 65 per cent of the shares. The six levels represent points surrounding the conventional equity accounting and consolidation cut-offs (i.e. 20 and 50 per cent) and therefore capture perceptions at the margins of these traditional measures. Four of the levels are concentrated in the 30-51 per cent band, as the focus of the study is the cut-off for dominant strategic control and therefore consolidation (not the lower bound for equity accounting). The 15 per cent level represents an arbitrary lower end ownership level at which strategic control might be possible, and 65 per cent represents an arbitrary maximum ownership level associated with no strategic control. This gives a total of six levels for the instrument. Prior research suggests that additional levels increase subject's evaluation load, with limited or no gain for the results.

The total ownership attribute is presented in four combinations of direct and indirect ownership. Direct ownership is set to be either zero, 40, 60, or 100 per cent of the total ownership (which respectively corresponds with 100, 60, 40 and zero per cent indirect ownership). The 100 per cent direct ownership level reflects cases where the dominant entity holds only a simple direct holding in another firm. Conversely the holding by the dominant entity may be 100 per cent indirect. The two intermediate combinations reflect holdings which are either majority direct (i.e. 60/40 per cent direct/indirect) or majority indirect (i.e. 60/40 per cent indirect/direct). Again additional intermediate attribute levels would significantly increase the evaluation task for subjects.

Dispersion of ownership is represented by four levels. At one extreme all shares not owned by the dominant entity are said to be "widely held". This represents situations where less than 10 percent of the remaining equity in the investee is held by

a single entity. The other three levels of dispersion, 10, 20 and 30 per cent, represent the percentage of other shares closely held in a cohesive block. These levels recognize that the probability of action by block holders increases as the size of the block increases. A 10 per cent block is the minimum sized block that prima facie indicates a closely held firm (see Chapter 2). The total ownership level of 65 per cent places an upper bound on the percentage that can logically be closely held. The maximum percentage representing closely held was therefore set marginally below this upper bound at 30 per cent. The final level, 20 per cent, is the mid point between the 10 and 30 per cent levels.

The four levels of non-independent board membership are 2, 4, 6, and 8 directors on an average sized ten-member Board of Directors. The two points either side of the 'majority' cut-off, 4 and 6 directors out of ten, respectively reflect situations where the dominant entity either has significant influence or strategic control of the board's decisions. An absolute dominant position of 8 members on the board was also set. The two majority positions of 6 and 8 common board members are drawn directly from the Adsteam case. Finally a minority position of 2 non-independent board members was selected to complete the range for the board membership levels.

Data Collection Procedures

The test instrument defined each of the attributes in turn. It also included instructions for the subjects on how to evaluate the case cards and self score their responses. These instructions are reproduced below.

1. Detach along the perforations each of the 38 cases to form a series of "cards".
2. Sort all 38 "cards" into two piles -- one pile for those cases you consider company X strategic controls company Z and one pile for those where company X does not strategic control company Z. Some respondents may wish to use a third 'doubtful' pile, which is then re-evaluated and split as appropriate between the strategic control and not strategic control piles.
3. Examine the contents of your final two piles, making sure that you agree with your evaluation, swapping some "cards" over to the other pile if you like.

4. Taking each pile in turn, record your responses on the response form over the page. Make sure that you circle **YES** if you consider company X **does strategic control** company Z and **NO** for each case you consider company X **does not strategic control** company Z. Also indicate how confident you are about your evaluation on the 5-point scale. (See example below)
5. Complete the additional questions concerning your evaluations and background. Seal the response booklet in the reply-paid envelope and place in the post.

The card sort approach was chosen for three reasons. First, card sorting (also referred to as Q sorts) is a proven research method for capturing individual opinions, preferences and decisions (Stephenson, 1953; Rosenberg, 1956; Kerlinger, 1986) and is often used in marketing conjoint studies (Green and Srinivasan, 1978; Wittink and Cattin, 1989). Second, the method allows subjects to freely compare and sort the case cards, a freedom that conventional 'rate-the-list' formats do not afford. This means subjects can separate straight forward cases from a 'doubtful' pile that can be returned to for more careful consideration. If the card format makes it easier for the subjects to assess the cases then judgment quality is likely to be higher. Third, the 'game-like' quality of the task generates subject interest. Such a positive disposition on the part of subjects may improve the probability of obtaining quality responses. Subjects were also required to provide self-explicated ratings of the importance of each strategic control attribute.

The following example case and response form provided a guide for the subjects:

EXAMPLE CASE PRESENTATION:

X's Total Level of Ownership of Z's Stock	65%
X's Level of Direct Versus Indirect Ownership in Z	All direct
Dispersion of Ownership of Other Stock in Z	Widely Held
Company X's Representation on Z's Board of Directors	8 of 10

If you judge that company X **does strategic control** company Z then place this case in the strategic control pile and record your evaluation by circling **YES** on the response form. If you feel **EXTREMELY CONFIDENT** about your classification then circle a number close to 5, as below.

Case	Does Co. X	Not too	Extremely
------	------------	---------	-----------

No.	Strategic control Co. Z? Confident	Confident	1	2	3	4	5
E.g.	YES NO		1	2	3	4	5
<p>If, however, you are NOT TOO CONFIDENT about your classification of the case then circle a number closer to 1, as appropriate. Be sure to use the full range of the scale to indicate the degree of confidence you have in your evaluations and remember there are no right answers to this task. We are interested in <u>YOUR PERCEPTIONS</u> of the strategic control relationship.</p>							

Conjoint Analysis:

Conjoint analysis is a method for estimating the joint effect of two or more independent variables on the ranking, preference for, or ordering, of a dependent variable. Conjoint methods developed in mathematical psychology as a way of decomposing judgments of multi-attribute alternatives to reveal the implicit (unmeasurable) importance attached to the underlying dimensions (Debreu, 1960; Luce and Tukey, 1964; Krantz, 1964; Krantz and Tversky, 1971; Srinivasan and Shocker, 1973; Green and Rao, 1971; Green, 1974). The emergence of conjoint analysis paralleled the development of multi-dimensional scaling (MDS) techniques (e.g. Coombs, 1964). Both are designed to analyze ordered judgments.

Conjoint methods are more powerful techniques than MDS for analyzing judgments of multi-attribute alternatives as they allow the researcher to decompose total-object evaluations to reveal the decision importance of the underlying attributes. The philosophy implicit in conjoint's decomposition approach is that humans form judgments in a holistic fashion. Decision makers do not necessarily assign explicit weights to every, or even any, of the underlying attributes (Shepard, 1964). More importantly, there is no adequate independent measure for the weights decision makers assign to the underlying dimensions (Luce and Tukey, 1964; Krantz and Tversky, 1971). The research on subjective measures in psychology even suggests subjects are inaccurate in the explicit importance ratings they attach to the components of their own decisions.

There have been few applications of conjoint analysis in the accounting and auditing research (see Krogstad, Ettenson and Shanteau, 1984), or the research in strategic management, economics and finance (e.g. Slovic, Fleissner, and Bauman, 1972; Teas and Dellva, 1985; Zinkhan, 1990). Conjoint analysis, however, features widely in the marketing literature, which has refined the conjoint methods as a research tool. Marketing researchers use it to measure consumer preferences for the attributes of products (Green and Wind, 1973, Cattin and Wittink, 1982, 1989; Hair *et al*, 1987). The focus is on how the product attributes, such as the desirability of red versus green sports cars, are valued by potential customers. Similarly this study's concern is with the relative importance (i.e. decision impact) of different attributes of the strategic control multi-attribute information sets. Conjoint analysis is the appropriate method for addressing the issues of this study. It also represents a potentially valuable research tool to strategic management researchers.

Methods other:

During the instrument development: (1) an orthogonal array as the factorial design for the study was identified; (2) the initial set of stimuli case cards were developed; (3) the initial cases were evaluated and adapted; and (4) the stimuli and instructions were pretested. The test instrument and instructions were circulated amongst the accounting faculty at the University of Southern California, Los Angeles, and Bond University, Gold Coast, Australia, and the marketing faculty at Murdoch University, Perth, Australia. The revised version of the instrument was then pre-tested on seven subjects whose occupational credentials included experience as directors, financial executives, security analysts and accountants. The results for the pre-test, and the suggestions received from the subjects, resulted in only minor modifications to the test instrument.

Two further pre-tests were conducted using forty-three students majoring in accounting. The purpose of the first test with the students was to check for any remaining ambiguities in wording and instructions. It also provided an estimate of the total time burden and clerical effort required by the response format. The objective of

the second pre-test was to establish the stability of the responses to the test instrument. The second pre-test, using the same students, was conducted ten weeks after the first. The estimated models for the two pre-tests were not significantly different at either the individual or group levels and no adjustments were deemed necessary.

The predictive ability of the M individual models and the aggregate model were assessed. Any identified 'poor performers' - subjects exhibiting low levels of structure and hence low predictive ability - were excluded from further analysis at this stage (Hair *et al*, 1987). The estimated regression model for each individual and the aggregate model are used to 'predict' each subject's decision for the 32 estimation cases and for the 6 holdout cases. Pearson correlations indicate the degree that the predicted and actual decisions agree for both the estimation and holdout sets of cases. The model was estimated separately for each respondent using the Conjoint Module in SPSS-PC (SPSS, 1990). This module produces OLS parameter estimates and predictive analysis for each of the $M = 246$ individual respondents. An aggregate (i.e. average) model is calculated from the mean estimated attribute coefficients for the M individual models. Henceforth the average model is referred to as the aggregate model.

Prior to estimating the individual and aggregate models, the strategic control judgments were re-scaled to enhance the validity of the parametric analysis. Interval scale data is insensitive to linear transformations (Torgerson, 1967, p. 19), so the judgment data were re-scaled to lie on the equidistant ten point scale -4.5 to +4.5 (initially the responses were represented by the ten integer values -5 to +5 excluding zero). The input data were also standardized so that the parameter estimates for the individual models could legitimately be compared across respondents and to enhance

the interpretation of the aggregate model coefficients. Table 3 presents a summary of the parameter estimates for the M individual models and the aggregate model.

Table 3: Parameter Estimates for the M Individual Models and the Aggregate Model

Independent Variable	Panel A: M Individual Models				Panel B: Aggregate Model	
	1st Quartile	Median	3rd Quartile	% $\hat{\beta}_{j,m}$ Sig. at 0.10	$\hat{\beta}_{j,m}$ a,b (t-Value) ^c	1-Tail p-Value
Constant ($\hat{\beta}_0$)	-2.671	-2.402	-2.023	100%	-2.329 (-80.92)	< 0.001
Own ($\hat{\beta}_1$)	3.039	3.850	4.577	99.2%	3.666 (50.04)	< 0.001
Dir/Ind ($\hat{\beta}_2$)	-0.071	0.099	0.375	29.3%	0.191 (7.76)	< 0.001
Disp ($\hat{\beta}_3$)	-1.815	-0.622	0.191	43.5%	-0.806 (-8.84)	< 0.001
Board ($\hat{\beta}_4$)	1.174	1.906	2.678	89.4%	1.959 (29.13)	< 0.001

^a Mean $\hat{\beta}_j$ for the $M = 246$ individual models is signified by the ' \bar{m} ' subscript.

^b Aggregate model $R^2 = 0.5832$, and Adjusted $R^2 = 0.5830$.

^c t-test for $H_0: \beta_{j,\bar{m}} = 0$, $df = 32-5=27$.

The F-statistics for each of the M individual models were significant ($p < 0.01$) suggesting each model has significant in-sample explanatory power. The pooled residuals can also be used to test the combined explanatory power of the individual models, irrespective of whether there is contemporaneous correlation between the residuals for the individual models. An additional F-statistic is constructed from the pooled OLS residuals for the M individual equations as this is equivalent to a test of the seemingly unrelated regression estimation of the entire set of equations (Zellner, 1962; Dwivedi and Srivastava, 1978; Hirschey, 1981; Judge *et al*, 1985, 1988; Dielman, 1989). The F-Value for the pooled residuals is 17.39 ($df = 984, 6642$, $p < 0.001$). This confirms the M individual F-tests and implies that the M individual models as a group have significant explanatory power. Finally, an Omnibus F-test,

constructed to test the aggregate model, is significant ($F = 9.39$; $df = 989, 6637$; $p < 0.001$) suggesting that the aggregate model has significant explanatory power too.

There was no evidence of non-response bias. The responses were also found to be consistent and in that sense the measures provided reliable data for the model estimation. Table 3 summarizes the generic hypotheses and the results for the hypothesis testing reported in the chapter.

Table 4: Summary of Hypotheses and Major Results

Hypotheses	Results
Hypothesis One: Ownership is positively related to degree of strategic control $H_0: \beta_1 = 0$ $H_1: \beta_1 > 0$	H_0 : Rejected H_1 : Accepted
Hypothesis Two: Directness of ownership is positively related to degree of strategic control $H_0: \beta_2 = 0$ $H_2: \beta_2 > 0$	H_0 : Rejected H_2 : Accepted
Hypothesis Three: Dispersion is negatively related to degree of strategic control $H_0: \beta_3 = 0$ $H_3: \beta_3 < 0$	H_0 : Rejected H_3 : Accepted
Hypothesis Four: Board membership is positively related to degree of strategic control $H_0: \beta_4 = 0$ $H_4: \beta_4 > 0$	H_0 : Rejected H_4 : Accepted

The estimated aggregate model supported hypotheses one to four that all the attributes have a significant direct effect on degree of strategic control. The individual level analysis was less conclusive and suggested that the directness of ownership and dispersion attributes are significant for strategic control assessments for only some subjects. All four attribute coefficients were, however, found to be different to each other at both the individual and aggregate levels.

The estimated parameters for the model indicated that ownership and board membership are perceived to be the most important attributes in dominant strategic control relations. However, the implicit weights for indirect ownership links, and low levels of dispersion of non-owned equity, suggests these attributes are perceived to

mitigate the level of dominant strategic control achieved through ownership and board membership.

Conclusions/Discussion:

The results for the model estimation allowed the acceptance of hypotheses one to four that each of the four attributes has a significant impact on the degree of strategic control. Our further empirical evaluations suggest that the parameters are also unequal. The parameters for ownership, ownership complexity, dispersion, and board membership were all found to be significantly different for at least some of the individual models.

The structure of the estimated strategic control model (see Table 3) implies that strategic control can be established through 100 per cent ownership but not by 100 per cent board membership. Ownership is therefore sufficient for strategic control. Where there is less than 60-64 per cent ownership (i.e. the ratio of the coefficients for the constant and the ownership variable) then other strategic control attributes are necessary to achieve strategic control. For instance, an inter-entity relation consisting of 40 per cent ownership, all of which is direct, with all other stock widely held, also requires at least 34 per cent of the board membership to attain the threshold level of strategic control of a zero score for the model. Board membership by itself is not sufficient to achieve strategic control. Some level of the other three strategic control attributes (i.e. ownership, direct holding or low dispersion) are required to outweigh the negative constant in the model and establish a threshold level of strategic control.

Although ownership and board membership have the largest contribution in the strategic control model, the results indicate that the level of direct versus indirect ownership and dispersion of ownership also contribute to the strategic control index. Lower levels of ownership or board membership are required if the shareholding is direct. It is easier to exert the power associated with board positions and/or ownership if a greater percentage of the holding is direct. If there is a high probability that others can challenge the dominant position (i.e. remaining shares are dispersely held), then the absolute level of ownership and/or the level of board membership has

to be higher to establish and maintain dominant strategic control. Conversely, total board dominance with a small equity interest is unlikely to be left in place by other block shareholders.

Our research suggest that only focusing on ownership links can lead to misrepresenting who actually controls the strategic actions of the firm. Strategic control exists where one entity has the capacity to control the operating and financial management policies of another entity, irrespective of whether there is a majority ownership interest. In contrast, de jure strategic control is the right of one entity to participate in asset distributions of another through ownership, which may or may not confer decision making control.

Our research suggests that combinations of attributes gives one entity "strategic control" over the decision making of another entity. The model which we empirically developed from an Agency Theory foundation will assist strategic management practitioners to assess the extent of strategic control in inter-entity relationships. Our predictive model provides compelling evidence to assist practitioners in determining how to achieve strategic control over another entity. The attributes identified in the model could also form the basis on ways to achieve strategic control without the costs of majority equity investment. Attributes of strategic control, other than ownership, may produce much more cost effective devices for establishing and maintaining strategic control of another entity. The model will help identify possible trade-offs in structuring inter-entity links. Conversely the model could be useful in identifying takeover defence strategies.

Limitations of The Research

The power of the estimation models and other statistical tests is dependent on both the sample size and significance levels employed. There were 27 degrees of freedom (ie. $T-K = 32-5$) for the individual regression models which, while not large, is sufficient for valid inference. Compensatory estimation errors are neutralized by forming an aggregate model and the pooling process which has at least $M \times (T-k)$ degrees of freedom (where $M = 246$). Given the sample size, the probability of type II

error is low. Further, the low significance levels for most of the analysis means that the probability of type I error is also low.

The reliability of the measures employed impacts directly the level of noise in the data. No direct testing of reliability of the measures was possible for the test subjects. Nevertheless consistency analysis suggests that the respondents were far from random in their responses. It is therefore unlikely that the measures introduced significant levels of noise into the data. Other sources of error stem from the quasi-experiment design. The mail questionnaire does not allow complete control of the treatment implementation or the impact of extraneous sources of variation unique to each data collection site. The only control possible in the design was a standard set of instructions to respondents on the procedures to follow. The exact error from this source can only be estimated from further true experiment applications of the instrument.

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Figure 1: Categories on the Strategic control Continuum

